

~~T7371~~

1737H

UC-NRLF



B 2 842 634

S B
249
A87
1881
MAIN

0
cu
ADDRESS

OF

EDWARD ATKINSON

OF BOSTON, MASSACHUSETTS,

GIVEN IN ATLANTA, GEORGIA,

IN OCTOBER, 1880,

FOR THE PROMOTION OF AN INTERNATIONAL COTTON
EXHIBITION.

BOSTON:
A. WILLIAMS AND COMPANY,

NO. 283 WASHINGTON STREET.

1881.

The organization of this association, comprising the most intelligent and progressive men in the cotton trade, was greeted with enthusiasm throughout the country. It became apparent at once that the project would be pushed vigorously, and would redound to the vast benefit of our leading national industry. Following the plan laid down by Mr. Atkinson, the exhibition is intended to represent every thing that concerns the growth of the plant, the fertilization and treatment of the crop, the handling of the staple in every shape, and the commercial disposal of raw cotton; and also its manufacture in every form, the kind of mills and machinery for such purposes, and all that the most recent invention may afford for the improvement of these processes. Machinery of all the classes demanded in cultivation first, and next in ginning, baling, packing, and compressing raw cotton, belongs to the first division of machinery exhibits. The machinery requisite for the manufacture of cotton, with the best form of mills, the most economical applications of power, and all the details of subsequent manufacture, constitute a great department in which there is a world of interest. The cotton plants and fibres of all countries, and the whole line of cotton fabrics, with comparisons of primitive methods and present improved processes, will form a feature of great interest and value. Intelligence of the utmost consequence upon all these subjects will be imparted. The prospectus will shortly be issued, setting forth minutely all desirable information.

Many letters have already been received from nearly every part of the world, and the only doubt that now remains is about the probability of having space enough to properly represent all that will be sent to exhibit.

Such an exhibition cannot fail to do a great service. It will impress forcibly upon the minds of the world that the South has a great future before it, which, with proper aid and encouragement, it has the enterprise and good judgment to cultivate in a broad and liberal manner. The exposition which Mr. Atkinson has proposed will be an immeasurable blessing to the South; and it will doubtless stretch its hands out in the liberal course now open to it, becoming prosperous in its own right through a liberal development of its own resources.

JOHN W. RYCKMAN,

Secretary International Cotton Exposition Association.

The writer may be permitted to submit a few words more upon one branch of the subject of his address, about which there has been considerable misconception; viz., his views upon the establishment of the cotton manufacture in the cotton States. His Southern friends appear to have been somewhat disappointed because he will not commit himself to a recommendation of Southern cotton factories as an investment for Northern capital.

He would have preferred to omit all reference to this matter, either in the address or at the present time, had it not been in a measure forced upon him. The editor of a paper in New Orleans desired him to write an article upon cotton manufactures in the South, which he declined to do; adding that he could not conscientiously recommend the investment of capital in Southern cotton mills. This note was not intended for publication, but was published, and caused a good deal of discussion; the writer's position as special agent of the census on cotton manufactures giving it an undue prominence.

The proposed exhibition could not have a more urgent reason than but to determine this question. The manufacture of cotton is a unit;

it consists of three distinct departments: to wit, 1st, the preparation of the cotton for the spinner; 2d, spinning; 3d, weaving and finishing.

The preparation of the cotton must be conducted near the place where the cotton is grown: it must therefore be diffused over a wide area. It offers a vast field for invention, improvement, and for profit. On the other hand, the spinning and weaving of cotton in factories tends, in all countries, to concentration in special places. Climatic conditions may have much to do with the first beginnings; but after a time the whole training and habit of the people are directed to the work, — all the subsidiary employments are established, a market exists for the waste, and the subdivision of labor is carried to the point of utmost economy. All this is necessary in a business that is so close, that the profit or loss in the larger part of the work turns on a quarter of a cent a yard.

The special districts in which the cotton manufacture has become established are those in which the mean temperature gives the stimulus needed for the continuous work of the factory, and where in-door work is more consistent with comfort than out-door labor.

It is true that, many years since, the daughters of the farmers of New England constituted the most numerous class in the cotton factories, but they have long since gone into easier and better paid occupations; and the factories would now be unable to compete, even in the relatively dense population of the North, were it not for the constant supply of French-Canadian operatives.

If this difficulty obtains in the North because of the competition for labor in the vast diversity of the less conspicuous branches of work, how much greater may it not be in the South? The Southern friends of the writer may not be averse to accepting an opinion that the South has a vast field of work in the manufacturing and mechanic arts that promises a much greater profit than the manufacture of cotton fabrics can offer for many years to come.

Let us consider some of these, first admitting fully that the climatic conditions of Atlanta and throughout the Piedmont district may be favorable to the cotton manufacture. There are many other reasons why many other branches of industry should precede the textile factory.

Ought not capital to be first used in the undertakings that will give employment to the largest number of persons at the highest wages?

For instance, the largest tannery in the United States is now situated at Chattanooga, Tenn. Why should the six hundred hides that are daily sent there from New York, to reach the supply of oak-bark furnished by the woods of Tennessee, be sent back to the North to be made into boots and shoes? It requires an investment of eight hundred to twelve hundred dollars for each operative employed in the cotton factory, less than four hundred dollars in a boot or shoe factory.

A few comparisons may be useful to make this point clear. The industrial census of Massachusetts of 1875 was very accurately taken. The number of cotton spindles then existing was somewhat less than now; but the data will serve as well for comparison as any that could now be compiled.

The capital then invested in cotton mills was, in round figures,	\$64,000,000
The persons employed	60,176
Average capital to each operative	\$1,060
Average earnings of each operative per year	\$334
Value of product	\$78,000,000

BOOTS AND SHOES.

Capital invested	\$18,700,000
Persons employed	48,090
Average capital to each person	\$390
Average earnings to each operative	\$455
Value of product	\$89,400,000

LEATHER.

Capital invested	\$8,400,000
Persons employed	6,620
Average capital to each person	\$1,310
Average earnings to each	\$580
Value of product	\$23,700,000

METALS, METALLIC GOODS, MACHINES, AND MACHINERY.

Capital invested	\$35,800,000
Persons employed	27,124
Average capital to each person	\$1,320
Average earnings to each person	\$590
Value of products	\$44,300,000

But it is in the lesser arts that a small capital serves for the employment of a large number of persons at full wages.

In 1865 we had the following averages and numbers in Massachusetts:—

	Employed.	Earnings.
Agricultural implements	1,176	\$680
Artisans' tools	1,132	646
Carriages and wagons	3,003	622
Clocks and watches	1,106	707
Clothing (in special establishments)	13,702	446
Furniture	5,800	570
Musical instruments	2,095	866
Miscellaneous	18,676	426

These are but a portion. Outside of this list may be found the thirty thousand blacksmiths, carpenters, tinsmiths, coopers, harness-makers, plumbers, roofers, and other artisans, employing but a small capital, and each earning, on the average, five hundred and eighty dollars per year.

Since 1875 the specie standard has been restored, prosperity has returned, and all these earnings must be increased by ten to twenty-five per cent; in some branches even more.

It is these lesser occupations, requiring but small capital, managed by individual owners, and paying high wages, that build up States and create towns and cities.

Iron is now made at Chattanooga at a less cost than in Pennsylvania; and both there and in Atlanta the use of iron is rapidly increasing. Where are to be the shops in which the tools of the new South are to be made?

Where are to be the Southern manufactories of clothing, a branch of work that gives employment to vast numbers of Northern women in their own homes, besides thousands who are employed in the cities? Skilful sewing women earn much higher wages than factory operatives, and the only "poor sewing women" are those who don't know how to sew. There were thirty-one thousand women employed in their own homes in Massachusetts, in 1875, in the manufacture of clothing, straw goods, whips, &c.

The deposits in the savings banks of Massachusetts, mostly belonging to her working people, amount to \$220,000,000 at the present time.

With the extension of the common school, and the rapid increase of an industrious and thrifty body of citizens in the South engaged in these necessary pursuits, capital will be rapidly absorbed, and there will be no sure supply of operatives for cotton mills on any large scale, because other pursuits, offering conditions of life more consistent with the conditions of a climate in which out-door work, or pursuits that do not require continuous labor ten to twelve hours a day and three hundred days in a year, will be open to all.

On the other hand, the most important branch of the cotton manufacture — that of ginning, packing, and preparing cotton for the use of the factory — must continue to be done in the South, and every million dollars spent in the right manner in this department will produce more wealth and do more to build up the cotton States than any ten million expended in cotton factories. In this connection, the communication to be found in the Appendix, lately made by the undersigned to "The Planter's Journal" of Vicksburg, Miss., will not be without interest.

It is in order that these opportunities for immediate profit may be made apparent that the cotton exhibition should be held.

There are two corporations in New England that operate forty per cent more cotton spindles and looms than all the fifty cotton factories of Georgia combined; and each of these is adding more spindles to its present capacity, relying in part for its market upon the greater purchasing power of its Southern consumers, as they engage in the diversified occupations now open to them since the curse of slavery was removed from their section. There are four Northern establishments operating more spindles and looms than are contained in all the cotton mills south of Maryland. Northern manufacturers do not fear Southern competition, but will promote the extension of cotton manufacturing as much as good judgment will permit. It would be greatly to their advantage to have a solid body of men in

the South interested like themselves in promoting better ginning, baling, and handling cotton as it comes from the field.

In another generation or two the time may have come for numerous and large textile factories in the Piedmont district; but for the present no increase of cotton spindles in the cotton States is likely to keep pace with the increasing demand for cotton fabrics of the same section.

Let the citizens of the Southern States visit the North, and examine its methods of industry, and it will soon become apparent to them in which direction their attention should be turned, and that, although no one can undervalue the importance of the cotton manufacture as it is now established in the North, it is yet a relatively unimportant factor in the vast field of her manufactures; the value of its product even in Massachusetts, where forty-five per cent of all the cotton spindles of the country are to be found, being less than one-sixth the value of the manufactures of that State, and giving employment to a less proportion of its population of working age.

The greatest need of the present time is, that the citizens of the two sections that have been so widely parted until recent times, should visit each other, learn the respective methods and opportunities of each State, and become convinced that in their mutual or inter-dependence is the foundation of their true union.

It is in order to promote such intercourse that the undersigned feels most solicitous that the cotton exhibition shall be held.

The Southern farmers are as little informed about the cotton manufacture of the North as the operatives, and even some of the employers of the North, are in regard to the production of the cotton fibre.

Let each class learn where it can most profitably excel. The railroad has almost eliminated distance; and each section that serves the other best, serves itself also. In teaching this lesson, the cotton exhibition will be a great schoolhouse full of instruction.

Slavery repelled where liberty unites. In the time that now seems so distant, no Southern man could learn the open secret of the North, or, if he learned it, he could not apply it in a section where skill and education were forbidden, and where it was a felony to teach the laborer to read; no Northern man could carry his rights as a citizen of the country into any slave State, or attempt to assert them there without danger to his life, nor could he study the system of labor as a mere question of economy without the risk of being hanged as a spy.

All these malignant conditions have passed away. The active and vigorous men born of the new South refuse to be controlled any longer by the Bourbons of that section; and the "stalwarts" of the North, who dare not trust the principle of liberty to work its just results, are being themselves classed as Bourbons incapable of guiding or directing the true union that now exists in this Nation.

EDWARD ATKINSON.

BROOKLINE, MASS., Jan. 13, 1881.

ADDRESS AT ATLANTA.

(Reprinted from "*The Atlanta Constitution*."')

GENTLEMEN, — It gives me great pleasure to assent to the request of some of your number, and to address you on the subject of the proposed exhibition to be devoted to cotton.

When I planned this trip it was intended merely for a change and recreation: but I received a telegram from Mr. Kimball, informing me I might be called upon to speak to you; and I therefore prepared this address in the short time left me, incorporating with it a statement previously written, which I intended to verify on this visit to the South. In the short time permitted me, I had no time to prune it or to smooth its rough points and expressions; and I am, on the whole, glad of this. When you challenge a Northern man to speak to you, it is better that you have his *first* thought.

The kingdom of cotton has been long divided; and, as it has been said that a kingdom divided against itself cannot stand, I have referred to some of the causes of its former division, believing that a thorough union can only be promoted by a full discussion of the facts and methods of the past, the changes and the prosperity of the future.

If I have been somewhat sharp in the points I have made, bear with them, remembering that I only speak as an economist, and not as a party politician. When we who are business men take a firm hold upon political questions, and try men and measures by their effect on industry and commerce, a great advance in the true science of politics will have been made. This is what I have attempted in this address.

It happens to have fallen to me to suggest that such an exhibition devoted to cotton should be held; and, so far as I am entitled to give an opinion as to the best place to hold it, I now give it in favor of the city of Atlanta. [Loud applause.] At first I thought the necessary combinations could be made, and the more needful contributions of money could be most readily obtained, if New York were selected; but I am now satisfied that, even though the exhibition may not be on as grand a scale in respect to cotton machinery, if the exhibition is held here, it will be more complete and more useful in all that relates to the cultivation of the plant and to the preparation of the seed and fibre, if so held here.

This is the main point, and it is also more important for our

Northern manufacturers to come here than it is even for you to go North; and they will come to this not too distant point when they might not be able to go farther.

For these reasons, and for many others, this city seems to be the place. It is flanked on all sides by the true cotton country, and it is the place of all others in which the new tools and implements, the new gins and presses, the new oil mills and the like, may be made or distributed.

But, more than all, it is the railroad as well as the manufacturing centre of a section that may soon be one of the most active and progressive in this broad land. This city is ceasing to be provincial, and is becoming cosmopolitan. It is in a State whose credit is good, in which common schools are actively promoted, and in which even the bluntest of free speech does not abate the welcome that is extended to the citizens of any State. [Laughter and clapping of hands.]

I shall use this right in the freest manner, because I propose to prove, before I have done, that success in secession would have been the greatest economic misfortune to Georgia and her sister cotton States, and that the first fruits of personal liberty, already gathered, are but the shadow of what is yet to come.

In respect to the plan for the exhibition, it may also be stated, that, in point of fact, no exhibition is needed to stimulate the rapid development of machinery for spinning and weaving the fibre of cotton. Improvements in this branch of cotton manufacturing already proceed with such rapidity, that it is almost impossible to keep one end of a large cotton mill up to a first-class standard until the other end is finished and started; and any manufacturer who neglects to adopt the improvements that almost monthly constitute an advance in some department of the art, will become bankrupt in ten or fifteen years.

It happened to fall to me to be the treasurer of a mill for whose use the first "slasher," so called, was imported from England in 1866. The slasher is a machine for sizing or starching the warp in preparation for weaving it, and it took the place of the so-called "dresser." The dresser was operated in a room at a constant heat of a 100° to 110°, and in an atmosphere saturated with the steam given off by sour starch. One machine attended by one man was needed for every forty or fifty looms. The slasher is operated in a cool, well-ventilated room; and one machine attended by one man, with a boy to aid him, will serve two hundred and fifty to three hundred and fifty looms, the number varying with the description of the fabric. This is the most marked single change that has occurred within my experience. Most of the improvements are in the minor details, and their full effect cannot be understood except by a comparison of one somewhat distant period with another.

In order that my comparison may be made with accuracy, periods must be chosen in which the money by which the cost of manufacturing is measured has been true money. It is useless to make any comparison of the ante-war period with any date prior to Jan. 1, 1879, when the specie standard was restored, because the lawful

money in use during that time was a lie. It purported to be a dollar, but was nothing but a deferred and depreciated promise of a dollar; and any comparison of wages, prices, or conditions of a paper-money period with a period in which true money is in use, will cheat and mislead the man who makes it, just as such money cheats the man or nation that uses it. You cannot even get at true data by converting the currency into gold for the purpose of comparison, because the use of a vicious currency perverts all transactions, steals from the laborer a part of the fruits of his labor, and conveys it to one who has done nothing to earn it.

In the words of one of the great patriots of the Revolution, — inconvertible paper money worked then as it has worked with us, — “it perverted the morals of the people; it destroyed respect for the courts; it ruined the fortunes of those who trusted most in it; it enervated the manufactures, mechanic arts, and agriculture of the country.” And of all the mighty monsters born of war it has been the most difficult to overcome.

Let us then compare the periods of 1840, 1860, and 1880 in respect to the conditions of spinning and weaving the coarse and medium cotton fabrics that constitute by far the largest consumption of cotton, that are the most useful, and that are the easiest to make. In each of these years true money in gold coin has been our only standard of value.

Since 1860 the following progress has been made in one branch of cotton manufacture, from which a rule may be deduced, although the changes would vary in respect to different classes of fabrics, as they may be coarse, medium, or fine.

From 1860 to 1878, at which latter date we were nearly on a specie basis, the following changes occurred in a large mill: —

The number of operatives per thousand spindles decreased from twenty-six and one-half to fifteen, or forty-three per cent.

The cost of manufacturing — i.e., preparing, carding, spinning, and weaving — decreased twenty-one per cent.

The wages of women increased twenty-five per cent.

Since 1878 the specie standard has been restored, and there has been a large advance in wages, owing to the restored confidence and prosperity; and in another large establishment on another class of goods the following changes have taken place between 1860 and 1880: —

Decrease in the proportion of operatives to each one thousand spindles, twenty-five per cent.

Decrease in the cost of preparing, carding, spinning, and weaving, fourteen per cent.

Increase in women's earning, fifty per cent.

Women and girls constitute a trifle under three-fourths of the whole number of persons employed.

Men's wages in these departments that require special skill have advanced in the same or greater proportion.

Common labor has not greatly changed since 1860.

It is the misfortune of unskilled labor in all countries and at all times to be compelled to work for a bare subsistence.

Since 1840 the change has been even more startling. One operative, working sixty hours per week in 1880, turns off twice the number of yards of standard sheeting that one operative could produce in 1840, working seventy-two hours per week.

The one operative of to-day receives very nearly as much wages as the two did in 1840, and actually more than the two did then, counting hour for hour, while each gold dollar of the wages of 1880 will buy more comfort and luxury than each gold dollar of 1840.

One-half of this progress was made between 1840 and 1860, and the other half has been made between 1860 and 1880, in spite of the distress of civil war and the corruption of inconvertible paper money.

Now, gentlemen of the South, I am going to use free speech for a purpose, and to speak some plain words of truth and soberness to you. I shall not permit myself to insult you by admitting even into my own mind that I cannot speak my convictions, and ask searching home questions here with as much independence as I can in my own little native town in Massachusetts. If any one here objects to free speech, let him do it now. Thank God, that time has gone by! I speak then to you here and now as a Republican of Republicans, as an Abolitionist of early time, a Free-Soiler of later date, and a Republican of to-day; but I also speak, and yet more truly, as a Democrat of Democrats, because no man can be a true Democrat who does not maintain the equal rights of every man, without distinction of race, color, or condition, to speak, act, and vote as he freely chooses, provided that by such acts he does not oppress his fellow-man, or commit any injustice upon him. [Applause.]

Upon this righteous foundation this nation has been established. When it shall have been fully comprehended, the terms of North and South, of East and West, will be but geographical descriptions; the terms will make no separate interests or ideas, and no divided allegiance.

One in laws, and one in customs; one in faith, and one in hope; one in charity for the mistakes and errors of each and of all; one in effort to overcome the prejudices of the past; one in the determination to make our whole country a solid nation, "the promised land" for the oppressed of all climes and of all races of men, — we shall then march ever onward toward the prize of our high calling among the nations of the world. [Continued applause.]

But let us not be diverted from our practical purpose. What we want now are hard facts; and, if my questions seem like hard knocks, let the sparks that fly light us on our way to just conclusions.

You will observe that half our progress in the North in the art of cotton spinning and weaving from 1840 to 1880 was made in the first half of that period; and, as it has been in cotton manufacturing, so has it been in every other branch of the manufacturing and the mechanic arts in the North.

Now, gentlemen, how much progress did you make in your depart-

ment of the cotton manufacture, — in the art of raising cotton and preparing cotton for the spinner from 1840 to 1860? I don't wish to impute ignorance or incapacity to you; I know as well as you do that some of your planters had as much skill and intelligence as any men engaged in working land in the world; I know how you increased your crops: but I ask you, What reduction in the cost of raising cotton did you as a people make in that period?

How much did you change and improve your ploughs, your hoes, and your cultivators?

What did you learn about fertilizers?

What did you know about phosphates?

Was each cotton gin better than the last?

Did each little improvement emanate from one of your own skilled mechanics who worked the cotton gin, and could not help trying to improve it?

Was each new gin-house safer and better than the last?

Did you apply your power with more economy?

Was each press more powerful?

Was each year's crop better ginned and handled, better packed and sent to market, subject to less waste than the one previous?

You may say "yes," and attempt to prove your case by special examples. I admit them: they only strengthen the rule; they only proved how certainly improvements could be made, and by their very contrast made the general inefficiency of your former methods more marked.

There can be no general progress where the laborer is not worthy of his hire; and that land will always be accursed where the man who earns his daily bread by the work of his own hands is not honored.

When slavery ended, not only were blacks made free from the bondage imposed by others, but whites as well were redeemed from the bondage they had imposed upon themselves.

In that dark and distant past, did your cotton land improve in product every year? or, to quote the words of Henry A. Wise of Virginia, "Did not your niggers skin the land, and your white men skin the niggers?"

To quote again from Dr. Cloud of Alabama: "Didn't you gully your hillsides, and blast your prairies?"

Why do I ask you these questions, and, as it were, rub you on the raw?

Not only because it is the right of every man in the country to use free speech, but in this case it is necessary.

We are considering a problem in the science of political economy; we are contrasting two systems of labor; we need to base our future practice on past experience. There is no more room for passion or feeling in the case than there would be in considering which kind of land would produce the most cotton.

When you study the past system of slave-labor with the present system of free labor, irrespective of all personal considerations, you will be mad down to the soles of your boots to think that you ever

tolerated it; and, when you have come to this wholesome condition of mind, you will wonder how the devil you could have been so slow in seeing it. [Laughter.]

Are you not asking Northern men to come here, and do you not seek Northern capital? If you suppose either will come here unless every man can say what he pleases, as I do now, you are mistaken.

These are not mere haphazard questions. You have yourselves implanted an ingrained distrust of your own people, of your lands, of the possibility of white men's labor, of your climate, and of your soil, in the minds of men in other States and in other countries that it will take a generation to remove. It will be necessary for you to reply to these questions, and to help the removal of these false ideas, in order to overcome the prejudices that you yourselves have created, else the tide of immigration will continue to pass by you, and your lands will be sparsely occupied for half a century more.

Didn't you as a people bear your testimony that white men could not make cotton? Didn't you believe it?

Didn't you make the world almost believe it?

Was not I subjected almost to ridicule in 1861, when I predicted and proved that larger crops of cotton would be made at less cost by free labor, and by white labor as well as black, than could possibly be made by slaves, in my pamphlet on "Cheap Cotton by Free Labor;" when also I proved from your own records that the mean summer temperature of your upland cotton country was lower than that of some parts of the city of Philadelphia, and that the average of the extremes of heat was greater in St. Louis than in New Orleans?

Who then would have admitted, as I then asserted, that if there were a variety of the cotton plant capable of being grown in the North or West, producing no lint but only seed, it would be one of our most valuable crops, as flax seed now is in some parts of the West, although the flax stalks are all burned.

Is not your whole system of ginning, baling, pressing, and marketing cotton to-day about as crude and as bad as ever, — not quite, but nearly so?

When you get up this exhibition, I want you to make one part of it permanent. You should establish a historic museum, before it is too late, as a landmark by which to measure your own progress in the next decade, and in which to save some of the relics of the past.

Begin with a "nigger hoe" and a bull-tongue plough, a model of a common gin-stand of the old times, a picture of a pile of seed alongside rotting and wasting; and with these place the hand loom and the spinning wheel of your mountain district with some of your home-spun goods. Put into this museum the best, the medium, and the common doings, and I venture to predict you will say to me a few years hence, about the economic aspect of the case, what one of my most valued friends in Georgia said to me a few years since, when speaking of the moral and political aspect of slavery, "that he looked back with utter horror, wonder, and amazement upon practices which were then tolerated and unthought of because they were customary."

Gentlemen, apply these questions which I have asked in regard to the period from 1840 to 1860 to the period that has elapsed from 1870 to 1880. Mark the changes and the improvement; mark the first fruits of liberty, and tell me then if that progress which has been accomplished in this last decade, great as it is, is more than the faintest shadow of that which may be in the near future. What do we Northern men want to see in this exhibition?

We hear of trash-cleaners that will give a good yield of lint in good condition from the dirtiest boll picked at the end of the season to save it, — boll and lint together. The Ralston trash-cleaner, made in Brenham, Tex., is one. The machine made by Mr. Clarke of your own city is another.

We want you to put up your best cotton in one hundred and twenty pound bales, pressed on the farm with the little Dederick press that compresses it to forty pounds to the cubic foot, — hard as elm-wood, and as little liable to soak water, — wired on the cotton, and sent to market in a clean meal-sack.

We want extra stapled cotton for fine spinning to be combed, not carded; and such cotton ought to be ginned on the new roller-gins, now made in England, that are said to beat the saw-gin, not only in quality, but in quantity.

We want to see all the crude devices proposed to be used in picking, although we don't much believe in them.

Somebody is wrong about the Clement attachment. Who is it? The exhibition will show.

We want to see the colored farmers' cotton in competition with the white farmers'. We want to prove to you that education pays, and that the more faith you have in the capacity of your own black laborers, the better cotton will become year by year.

Do you know that you are the most amusingly inconsistent people on the face of the earth? I have had a very wide correspondence in your States, and I guess I have asked more questions of you and about you, by letter, circular, and by word of mouth, than any Yankee that ever lived; and now I am going to give you a summary of your own testimony about the nigger, spelt with two g's, as you spell it.

You will see how conclusive it is, and you will each of you be able to add some one or more facts to sustain every point. I wish you would give them to me; but I will say one thing, the harshest condemnation of the colored men I ever heard has come from Northern men. Now to our testimony, — positive in all its points, and good before any jury in the land: —

I find that, having become free, the black women take such poor care of the babies, that the colored population has increased faster than the whites have migrated to Texas: therefore the census is going to show a much larger relative gain of niggers than any one dreamed of.

I am informed that the nigger is the laziest and best laborer on the face of the earth; that he cares no more for comfort and cleanliness

than a beast, and has built large suburbs of good houses in every city, such as I have seen on this journey and my last one through the Atlantic States spring before last. Many of these houses contain an abundance of good furniture that he doesn't value a rap, but bunks on the floor. I learn that he breaks tools worse than he ever did, and makes larger and more varied crops than ever before; that he is lapsing into a barbarism in which he astonishes every one by the rapidity with which he learns to read; and, having turned altogether to the bad, is bringing up his children so that, if the poor whites do not take care, there will be many counties, as there are now a few, in which there are more illiterate whites than there are blacks in ratio to numbers; that he makes no progress in the accumulation of property, and has come into the possession of a great deal of land, especially in Georgia. He is also charged with the conduct of many large farms or plantations, and is in an indispensable factor in the future of your industry, who ought to be removed to Africa by the Colonization Society. Since I wrote this address, I have received a copy of an address given by an Episcopal clergyman, I believe of Vicksburg, in which it is held that the Colonization Society ought to be maintained to deport the colored population to Africa, because the negro has shown such an unexpected capacity for education that he is becoming instructed to a degree beyond any position that he can attain in this country, and that he therefore ought to go to Africa where he may have a fair chance. [Laughter and applause.]

Such, gentlemen, is the kind of testimony that may be had. You don't pay your money, but you do take your choice. My own observations tell me that the progress of the colored people of the Atlantic States (I have never been beyond them) is one of the marvels of economic history, pregnant with vast influence in the future.

I must refer to one other subject.

We have also been told that the Northern carpet-baggers have entered your domains, and, united with the Southern scalawag, infested your Legislatures, and by the power of the negro vote have burdened many of the cotton States with enormous debts.

Gentlemen, I have reason to believe that there is not a single State, or scarcely one, in which this burden of debt was imposed by the so-called carpet-bag Legislatures, in which the majority of the white men in such Legislature did not consist of Southern men, — Southern born and Southern bred. I cannot prove this; but if you desire good will and order, if you want Northern men and Northern methods, you need that the truth or falsehood of the statements on which this belief is founded shall be determined, and you need also to welcome, and not to repel by social ostracism, the true men and women from the North who have or shall come here to aid you in leading this colored race out of bondage into liberty and life.

It is a far easier task than we have in Massachusetts, where nearly one-fourth of our population is foreign-born, and consists of those who have come to us subject to deeper prejudices and a kind of ignorance more difficult to overcome than any thing you have to meet in dealing with these people.

I speak of these things because no exhibition of material resources, no show of cotton, corn, or wool, will much avail, unless the mental as well as the material progress of the States and of the Nation are alike promoted.

I have asked these questions as to your methods of cultivation, — as to your treatment of the land, and as to your tools, implements, gin-houses, and the like, for a purpose.

Maybe you think this is somewhat of an assumption on my part, a mere outside observer and theorist; but I tell you the questions are not mine. If you want to find the originals, go to De Bow's Review; to Dr. N. B. Cloud of Alabama, and other Southern writers; to any of your Southern magazines and papers from 1840 to 1860, — and you will find these questions all there, together with assertions of the bad methods referred to, but put with more vigor and more pertinence or impertinence, whichever you choose to call it, than can be attributed to me.

We are members one of another; and, if you want to "jaw back," come up to New England and search out all our weak places, and we will cure them if we can.

I assume that you listen to me now as my good old friend Edward Harris used to when a man came to look over his great woollen mill. He was one of the most skilful woollen manufacturers we ever had in New England, and the doors of his mill were open to every man who applied to him. I asked him one day why he let me and his other competitors enter. "Oh," said he, "any one may go in; but I always want to go with 'em myself. Any fool can teach *me* something." So, maybe, I can teach you. [Laughter.]

I suppose you think I speak with more urgency than the present case will warrant; but you would comprehend it more fully if you had bought as much cotton for manufacturing purposes as I have; and I only echo the present and urgent complaint of Northern manufacturers against the dirty, wet, muddy bales of cotton fibre, badly ginned, badly covered, and badly packed, that still constitute the bulk of the receipts; and it is sometimes enough to make a saint swear to get a lot of peeler or other type of extra stapled uplands, and find it all nepped and gin-cut by the saw-gin, when we have every reason to believe that Dobson & Barlow of Bolton, and Platt Bros. & Co. of Oldham, Eng., have perfected the knife roller-gin so, that it will not only save the staple and beat the saw-gin in quality, but also in the quantity that either will turn off per horse-power applied.

We have reason to believe this on the testimony of the most exhaustive series of trials of gins ever made, the results of which have lately been published by the East India Board.

This is but one of the many subjects that would come up in the proposed exhibition.

Another subject which impresses me as of the greatest importance is cotton, wool, and perhaps paper from the same field.

In submitting this as a part of my address, I desire to say that it was written for a different purpose. I intended, and still intend, to

submit it to Northern manufacturers; and I want you to criticise it, and to point out to me the errors into which I have fallen. Am I right or wrong? Can you raise cotton and wool off the same field? If not, why not? What will your exhibition show on this point? Cotton and wool, perhaps paper stock from the same field.

In my recent communication to "The New York Herald," proposing an exhibition devoted to cotton and its products (which proposition you are now considering), it was suggested that a portion or the whole of the hulls of the cotton seed might be devoted to the manufacture of paper at a low cost.

As this has been questioned, the writer has since informed himself more fully, and he finds by consultation with an experienced paper-maker, who has worked cotton-seed hulls into paper, that the product of pulp from hulls taken from seed that has not been passed through a linter to remove the very short and fine fibre left by the gin, will be fifty per cent of pulp.

The treatment is boiling under pressure with caustic alkali, — about twenty-five pounds soda-ash, twenty-five pounds lime, and four pounds bleaching powders, to one hundred pounds of hulls. The cost of the alkali in Boston would be sixty to seventy cents per one hundred pounds of hulls.

I have no practical knowledge of this matter; but, if these statements can be accepted, another product of the fifty thousand square miles under consideration hereafter — by conversion of the least valuable part of the proposed subsistence of the sheep, to wit, the hulls — may be five hundred thousand to seven hundred and fifty thousand tons of excellent pulp ready for use by the paper manufacturer. The hulls are also used to some extent for tanning. I am also informed that they are used for packing railroad axle-boxes, and are much better than cotton waste. The stalk of the cotton plant is also full of fibre, and I have seen some specimens of paper made from the stalks that looked very promising.

The figures of the several products now given are somewhat larger than those first given in "The New York Herald," because it was thought that if the full case was all stated at the beginning it might really be deemed visionary to some persons to whom the facts are new.

The climate of a large portion of the cotton States is well suited to the production of fine clothing or merino wool. This section constitutes especially the upland country of Mississippi, Alabama, Georgia, South Carolina, and a large part of Texas, — a section not as hot as Spain or as the La Plata country, or the pampas of South America, from which latter point comes the fine "mestiza" wool.

There is one section constituting a part of Georgia and South Carolina, known there as the "thermal belt," lying south-east of the Blue Ridge, over which the warm winds from the south-west are deflected by the mountains, sending off the sea-breezes and storms that affect the lands nearer the coast. It is a healthy country, well watered by perennial streams flowing from the mountains, which,

being wooded to the top, condense moisture, and deliver it slowly and regularly.

This is the land of cotton, of the vine, and of the peach. It is difficult to conceive a climate better for fine-woolled sheep. In this section alone can be found an area almost sufficient for what is proposed hereafter.

Mutton raised on the sea islands, where the sheep browse on the marsh-mallow, is claimed by Charleston epicures to be superior to the best Southdown.

In the mountain valleys flanking this "thermal" region, possessing a rich soil and a dry, healthy, and not very cold climate, the long-woolled sheep may be grown to any extent, and, higher up, the Angora goat.

In its natural condition the soil of this upland section will yield from 175 to 250 pounds of cotton lint per acre.

When properly cultivated and manured, the product can be carried to 500 pounds per acre or more.

Assuming good cultivation and an average product of 400 pounds lint, there will be from 1,050 to 1,250 pounds of seed to each acre on the average. After setting aside enough selected seed for planting, there will be 1,000 pounds left for feeding.

It is the production of seed that exhausts the soil, and not of fibre. In the four hundred pounds lint there are but four pounds of chemical elements drawn from the soil; but in the thousand pounds of seed there are forty pounds of phosphate of lime and potash.

If this seed is used for a fertilizer as it comes from the gin, it works slowly and unevenly. The oil injures it as a fertilizer. It should all be fed to stock in order to give the best results.

It seems to suit sheep well if fed whole; but, for hogs and cattle, the more the oil is removed, the better it is.

Here let it be remarked that the removal of oil by hulling, and then pressing the kernel, is an ineffectual mode. By treatment with naphtha we have lately obtained oil from the hardest and driest cotton-seed cake to the amount of $15\frac{77}{100}$ per cent of the weight of the cake. But, as it has been said, sheep appear to thrive on whole seed, and must therefore thrive on oil-cake and hulls ground or mixed together.

The area of land from which the late crop of 5,750,000 bales of cotton was gathered, was 12,600,000 acres, — a trifle over 19,000 square miles. Assuming that 4,600,000 acres of this land was river-bottom, and we have 8,000,000 acres of upland under cultivation. The average product of the whole area in cotton was less than half a bale, or less than 240 pounds to the acre; and the average of the uplands could not have exceeded, if it reached, 200 pounds to the acre in this prolific cotton year just ended.

I have the record from my friend, Mr. Dunbar, of an old field of forty acres of sandy upland, near Augusta, Ga., brought up by the use of stable manure, composted with dead leaves from adjacent woods, from 150 pounds to over 500 pounds per acre.

The problem of sheep and cotton alternated on the same field may therefore be considered with reference to an area of 8,000,000 acres of upland, or 12,500 square miles, on which the proposition is to double the crop of cotton, and to add the wool clip without cost for the wool except for shearing.

For this purpose of alternation we shall need four times this area of land, or 50,000 square miles; in all 32,000,000 acres.

We may as well omit Texas from the consideration, because most of her cotton land is too rich for sheep. Her sheep-range is also too big to begin to consider fencing and folding at present.

We will also omit Louisiana and Arkansas, because there is more reason to expect bottom-land cotton from these States. We will assume that this work is to be done in the States of Mississippi, Alabama, Georgia, South Carolina, North Carolina, and Tennessee; and that it is also all to be done in such parts of these States as are subject to the conditions of climate that I have named, — in the country lying on the flanks of the mountains and midway between them and the low sandy coast-lands on the ocean or gulf sides of the States named (except Tennessee); that is to say, in that portion of these States where it is now claimed that most of the cotton is raised by white labor. It will require but seventeen per cent of the area of these respective States to give the 50,000 square miles now being considered. We will add three per cent for house and garden spots, and five per cent for roads and the like. We shall then treat twenty-five per cent only, or one-fourth of the respective areas of these six States. This will include the "thermal belt."

Now let us see what may be done with this section on the basis of ascertained facts.

Each 400 acres can be surrounded by a five-row, barbed-wire, dog-proof fence, and divided into four fields by cross fences at a cost, including posts and setting, of less than a thousand dollars.

In each 400 acres let one field be devoted to corn, one to cow-pease, one to cotton, and one to sheep. The seed from a first product of 200 pounds of cotton per acre with the grass which follows the cotton would carry two and a half sheep per acre on the next field for six months; and the cow-pease and corn-fodder would serve for the rest of the year. The pea-vines and sheep-dung would increase the crop, and more sheep would be added each year until in the third or fourth year the average would be 400 pounds cotton per acre on 100 acres, five sheep per acre on 100 acres, a corn crop increased in the same proportion as the cotton, say from 10 to 15 bushels to an acre to 20 or 30 bushels on the third 100 acres, and the cow-pease to be ploughed in or Bermuda grass to be cropped by sheep on the fourth 100 acres.

On the 50,000 square miles, or 32,000,000 acres, we should therefore have the following results: —

Lot No. 1. — On 8,000,000 acres (being the same area now in cotton in the States named from which this year only 3,000,000 bales cotton were gathered), we should have 6,666,000 bales of 480 pounds each.

Lot No. 2. — On 8,000,000 acres at five sheep each, 40,000,000 sheep, yielding at six and a half pounds per fleece, 250,000,000 pounds of wool.

Lot No. 3. — On 8,000,000 acres of corn, at 25 bushels per acre, 200,000,000 bushels of corn.

The oil that ought to be removed from the cotton seed before it is fed would amount to over 100,000,000 gallons.

If these figures seem somewhat visionary, let it be considered that the acres now under cultivation in corn and cotton in these six States number nearly 19,000,000, and that what is proposed is only to enclose 13,000,000 acres of adjacent waste land with what is now under the plough, and then to put less labor on the whole 32,000,000 than is now devoted to the 19,000,000 acres.

The cow-pea needs only to be planted and ploughed in; the sheep need only to be folded, — there would be about 3,000,000 less acres requiring constant labor than there are now.

If the same intelligence can be applied to one-quarter part of the land of six of the cotton States that has been applied in some small portions of them, these results can all be attained. Their realization is purely a question of common sense, moderate industry, and sufficient capital. How long will it take? The following report lately made at the request of the undersigned may be taken in evidence of the conclusions given in this statement: —

OAKLEY, ARKANSAS COUNTY, ARK., Sept. 7, 1880.

GENTLEMEN, — It has been suggested to me by Mr. Edward Atkinson that it might be beneficial to sheep husbandry in the South to give my experience in sheep-raising in Arkansas, and my experience in feeding cotton seed to sheep during the winter months.

I commenced sheep-raising in 1854 with 300 grade merino ewes crossing with Cotswold bucks. I wintered entirely with cotton seed and what grass they could get in the cotton fields. My flock increased to about 1,000 head, which was as many as I could handle. They were a smooth, healthy lot of sheep, and the deaths from disease were so few that I did not note the rate, but think two per cent would cover it. All of them I lost in 1862 from casualties of the war.

In the fall of 1878 I purchased a small flock of inferior sheep, most of them old, and some with symptoms of rot. I wintered them in the winter of 1878 and 1879 entirely on cotton seed, giving them a handful of seed morning and night. I had 20 ewes, and raised 29 lambs; 4 of the ewes not lambing, and 3 of the 4 dying during the winter of old age.

In 1879 I had 31 ewes, which were wintered during last winter entirely on cotton seed. They dropped 53 lambs, of which I saved 47. I fed these more seed, as I had plenty, and fed on the ground, which caused a waste of nearly one-half the seed. Cotton seed can be purchased at the gins at from three to four dollars per ton of 2,000 pounds. One ton will winter from 10 to 15 sheep when fed on the ground; if fed in troughs, it would winter 20 to 30 sheep.

I suppose the seed must be good feed, as the sheep look well. A neighbor of mine, who was a large sheep-breeder in Ohio, says that one ton to 40 sheep is enough when they have the run of a pasture, and that he can winter well a sheep at ten cents per head.

There are many cotton plantations in the South that are too much worn to make the cultivation of cotton profitable that could be brought to their original fertility by feeding sheep with cotton seed on the fields. These plantations could be divided into four fields, one of which could be set to Bermuda grass, which will afford grazing for as many sheep as eight or ten per acre as long as it would be healthy to keep them on it; one field could be sown with cow-pease, and fed off the ground during the winter; and, after the pease and vines were consumed, the sheep could be fed on the field the balance of the winter on cotton seed, and their droppings, together with manure from the pea-vine, would double the crop of cotton; and by this means the planter would enrich his land and himself at the same time.

I find Bermuda grass as good grazing as any I have ever tried; but it is only a summer grass, and seems to do best during hot dry weather, but required to be kept closely grazed, as it gets hard when old; but this could be remedied by keeping cattle and sheep in alternate pastures.

My experience teaches me that sheep can be wintered in the South at a cost of ten to fifteen cents per head, and, if credit be given them for the weeds and briars they destroy and the land they manure, the cost is less than nothing. Another profit could be added to sheep husbandry at the South, and that is the increased value of worn-out cotton plantations, which might be computed at ten per cent on the original cost of the land.

I neglected to say that I sow my Bermuda grass pastures with white clover, which makes good grazing in the spring before the Bermuda grass has commenced to grow, and again in the fall after the Bermuda has been killed by frost. Could the cotton planter of the South be induced to raise sheep, we could soon export wool instead of importing it.

Respectfully,

J. H. MOORE.

It would seem that an experimental farm ought to be established for the purpose of testing the best method of growing wool and cotton on the same field; and, lest the Washburn and Moen dog-proof fence should not be sufficient, perhaps it would be well to begin in North Carolina, where, so I have been informed, the supreme court has lately pronounced dogs to be *feræ naturæ*.

Let us assume the conditions and cost on a moderate scale, so that the undertaking may not seem so visionary as the large figures given in the preceding pages.

A farm to be purchased consisting of rather poor sandy soil. This I assume can be had at less than five dollars per acre.

Say 500 acres at \$5	\$2,500
Fencing and dividing 400 acres with barbed wire fence . . .	1,000
Barn and sheds in centre of the quadrangle, including gin-stand and other appliances	1,000
Tools and implements	500
Total	<hr/> \$5,000

Houses according to circumstances, and five hundred sheep at a price conditioned on their quality.

It may be assumed that ten thousand dollars would be an ample capital for such a beginning; but these figures are based on theory,

and not on practice. Perhaps a much less sum would serve the purpose. One thing more may be considered in this connection. While it is doubtless true that sheep thrive on the whole cotton seed with all the oil in it, yet it appears that there is too much oil. It affects the milk of the breeding ewes, and also deposits a great excess of grease in the fleece.

It would be truer economy to extract all the oil that can be removed by pressure, and then the ground cake and hulls would be in true condition to feed to sheep, cattle, or hogs.

Machines for hulling the seed can now be purchased at moderate cost; and we may be very sure that, as soon as a demand for small presses for farm use is made, the supply will come. The Dederick hay-press is now being used for packing cotton fibre to a compression equal to the density of elm-wood, or forty pounds to a cubic foot, and the inventor of that press seems equal to any emergency.

The removal of the oil, like the removal of the fibre, takes almost nothing from the land devoted to cotton, the mineral element being about three-fourths in the kernel and one-fourth hull.

It should be remembered in this connection that the work of two laborers in the cotton field, producing each ten bales of cotton, and with the aid of their children picking it clear; one man's work, or its equivalent in money, to gin, pack, and move the cotton to the factory in New England; and the work there of one, or at the utmost two operatives, — four or five in all, — suffices for the production of eight thousand pounds of heavy cotton cloth, sufficient to meet the need of 1,600 Chinese or 3,200 East Indians. The same number, or perhaps one more, — say, six in all, — will produce and convert the quantity of raw cotton into the fine fabrics needed by 1,000 inhabitants of the United States for their annual supply.

It should also be further considered that we as yet produce in the United States only about one-half of the cotton that is consumed in the world, possibly a little more, and that a larger number of the inhabitants of the globe are to-day clothed in cotton fabrics, spun and woven by hand, than there are clothed in the product of the machinery of Europe and America combined.

When all the relations and possibilities of the cotton plant are considered, even the apparently visionary treatment of the hard facts presented in this paper may be held to be worthy of consideration.

I submitted the first draft of this address to Hon. G. V. Fox, late Assistant Secretary of the Navy, who, in addition to his experience as a naval officer, has had great opportunities for forming a judgment upon the topics under consideration, having been for many years in charge of one of the largest woollen factories of New England. In response to my request he says, —

“This question of rotating wool and cotton has been a study with you; and since you presented it to me last winter at Aiken I have, in the region you spoke of, made such inquiries as to satisfy me that the physical conditions are such as to render the success of a trial more than probable. In fact, I find one man shifting about forty sheep

from field to field for the purpose indicated in your paper. In the Piedmont region of North Carolina, South Carolina, and Georgia, where cotton by the aid of phosphates is grown to the very foot of the mountains, it cannot be expected that, alone, it will be able to compete with the rich bottom of Tennessee, Arkansas, Mississippi, Alabama, or the rich lands of Texas."

"But the Piedmont region is the seat of future coarse cotton and yarn manufacturers, and the cotton grown there will all be wanted, as will the wool, to render useful the enormous water-power now running to waste. People are moving into this region, and dotting the great waste with farms. A moderate flock on each one of these is more practicable than large flocks in unappropriated lands where the absence of 'dog' and 'fence' laws render the business precarious."

"On all these subjects it would be very presumptuous for me to offer any criticism to what you have written other than to say that it commends itself to my common sense, and the rotation advocated has found within the field of my inquiries on the spot no obstacles but laziness and want of capital."

In the original draft of this address I had ventured on some statements in regard to the climatic condition of the section of land now under special consideration, in which I had named the so-called "thermal belt," of which I have heard many accounts. Capt. Fox's account of this section is so much more complete and authoritative than my own, that I have ventured to substitute it. Capt. Fox says, "There are, however, on the first page of your paper some remarks upon meteorology and the 'thermal belt' which are not of your investigation, and do not conform to my study of the subject. I should not criticise it had I not spent years at sea where meteorology is part of the daily life, and on land it is a great pleasure to continue an interest in the subject. There is no portion of the United States where freezing weather does not occur, excepting Key West and the southern parts of Florida. I was at St. Augustine in December, 1878, and walked on ice; the thermometer being 27°. At Key West it was 51° at the same time. There is probably no winter where the record will not show freezing weather everywhere in the United States but in Southern Florida."

"There are among the Appalachian Mountains, from Virginia to Georgia inclusive, belts of land—thermal they might be called—where frost does not appear; but the transition is from fall to freezing weather, without that intermediate state where the frosts destroy fruits, cotton, and tobacco. One of the most notorious of these tracts is near Tryon Mountain, coming down from Asheville to Spartanburg. It is some two thousand feet above the sea, and perhaps thirty by fifteen miles. I saw a planter who was growing cotton there. Fruits have, of course, a great advantage in such a region. The cause is said to be due to the fact that the parallel ridges of mountains retain the stratum of air, which, being heated during the day, ascends to a height where its equilibrium is main-

tained; and this relation, due to special configuration, keeps off the frosts in the fall, but, of course, not freezing weather, which stretches everywhere when the sun is on the Tropic of Cancer. With regard to storms, sea-breezes, and the deflection of winds by the Appalachian Mountains, it may be observed that hurricanes—the designation of those terrible tropical meteors—do not reach these mountains, because such storms, and all widely extended ones, are the product of heat and moisture. They are born in the Antilles, are rotary in character, and buried in the prevailing winds,—follow their course as the circular eddies do when an obstacle is placed in a stream. Their path is where heat and great moisture exist; otherwise their force is diminished, and they are dissipated. Those that strike our Atlantic coasts and follow the Gulf Stream are fed by the moisture and heat of that stream, and their greatest violence is on the ocean and its shore-line. I was in the mountains of North Carolina when the great cyclone of 1879 passed up the coast, destroying so much property at Beaufort, Wilmington, Long Branch, &c. It was only a gale in the mountains. Other meteors steer straight across the Gulf of Mexico; but their violence is expended in that inland sea, and along its shores, Havana, Key West, Galveston, Mobile. When the storm passes inland it expands, its violence immediately decreases, and the whole valley of the Mississippi and the Appalachian Mountains receive their needful rain.”

“The first observation one makes in these mountains is, that no violent storms can exist there such as characterizes the White Mountains, because, except on the very highest peaks, lofty and regular trees and cultivation reach their summits. They do not deflect these storms: they emasculate them by depriving them of moisture, and the vortex of the meteor, where the greatest force is exerted, must seek a water-way for its course. The prevailing winds bring great storms across our country from the Pacific; but they lose their moisture in crossing the mountains, and would be dissipated if it were not for the great chain of lakes, the moisture from which rekindles their fury; and they exhibit it in all the cities near their path in their way to the Atlantic, where they frequently meet a cyclone coming up the Gulf Stream, and the friction of the two are those terrible storms which one meets between here and England.”

“The cotton belt commencing in North Carolina, averaging two hundred miles in width, excepting where it ascends the Mississippi four hundred miles from its mouth, and terminating almost in a point in Southern Texas, has an axis whose mean temperature is 64°, with extremes from 27° by 30° to 98° by 104°.”

“I have already wearied you, and I should exhaust you if I wrote you any more of my reflections after two years’ travelling in this wonderful belt. I will finish by observing only, that the warm water of the Gulf of Mexico and the South Atlantic furnishes the moisture required for the cotton plant, while they both act as conductors to draw off the force of those cyclones which are let loose in the very months when the plant, if in their track, would be utterly destroyed.”

And now, gentlemen, let me make some practical suggestions in regard to the exhibition.

What should be aimed at in the exhibition may well be quality rather than quantity. Let the greater undertaking grow out of this one now proposed, and be held in New York as the cotton department of the great exhibition of 1883. Let the present one be suggestive, and be devoted more to cotton than to cotton fabrics, although there will doubtless be much machinery offered for the manufacture of the fibre into yarn or cloth.

This enterprise should be rather with a view to the development of tools and implements for the cultivation and for conversion of the plant into its primary forms of fibre, seed, oil, oil-cake, paper stock, and wool, than with a view to the manufacture of cotton fabrics.

For this purpose no excessive or even heavy expenditure will be required, provided the building be itself a part of the exhibition, and be so constructed that it will serve not only as a model, but may be taken down and sold in sections for as much or more than it will cost. How this may be accomplished, I will endeavor to show.

With the increasing use of steam in place of water-power, and the choice of ground which ensues, the construction of cotton factories only one story high is becoming common. Many persons, of whom I am one, are of opinion that a one-story factory may be made safer as to danger of fire; be less subject to vibration and consequent wear of machinery, more economical in working, and especially in overseeing; be much lighter, as well as more easy to ventilate and keep uniform in temperature; while at the same time there is no form in which so large an area of floor surface available for use can be provided at so low a cost per square foot. Some of these points are contested; but we are prepared to sustain them, and they are incontestable in respect to the building needed for this exhibition.

I beg to present to you a picture of a one-story mill lately constructed by the Willimantic Thread Company of Connecticut to contain fifty thousand cotton spindles, with all necessary machinery for preparing and carding the cotton, all on one floor of three and a half acres in area.

Here is another picture of a factory covering one acre and an annex covering three-fourths of another acre, which cost only fifty cents a square foot of floor surface, and which is so much lighter than a common mill that the saving in gas pays the interest on the cost of the building.

Here is another plan that has been adopted in some cases, and which is the one that I suggest to you, because it is almost all, and may be wholly, of timber and glass.

The mode of construction may be very simple; the foundation is very light, as the weight of the machinery comes on the frequent piers placed beneath in a basement high enough to carry all the shafting. For your purposes, the foundations may be trestle-work in place of brick or stone, if cheaper, and posts may be used instead of piers.

The structure may be in the form of a Greek cross, the engines being in the centre. The roof beams are eight feet apart, ten by twelve inches, or less in your climate where you have no dread of heavy snows; the rows of posts twenty-four feet apart, and eight feet apart in the rows. These divisions are convenient for almost any machines. Each wing of the cross may be seventy-two feet wide, and as long as called for. The end being a movable shield, sections can be built on as fast as wanted. The roof to be covered with two and a half-inch plank tongued and splined, and covered outside with cotton duck painted with slate paint; the floors of the same structure. For mill use there would be one-inch top floor; but for the exhibition this would not be needed. Monitors or lanterns at every other bay for light and air.

Where you have pine timber in such abundance, there can be but little doubt that you can put up this building at a cost of not over forty cents a square foot of floor. It can all be put together with bolts and nuts in such a way that, after it ceases to be needed for the exhibition, it can be taken down without injury, and put up again in sections to serve for gin-stands, workshops, oil mills, or any other purpose. The whole can be protected against fire by automatic sprinklers, by means of which a fire sounds its own alarm, lets on its own water, and puts itself out.

I have lately been hauled over the coals a bit in some of your Southern papers because I said I could not conscientiously recommend the construction of cotton mills in the South.¹ I do not suppose you will be convinced by any thing I can say. Do not think we fear your competition. You have such vast fields in other and more profitable directions, that we may expect the consumption of cotton goods to increase here faster than the production possibly can. You will have a hundred small workshops requiring but little capital to one cotton mill, but promoting wealth and general welfare in a vastly greater degree. But if you build cotton mills, concentrate them; don't scatter them. Each mill makes the next one easier to run. The higher paid artisans and mechanics in these lesser arts and trades will be our best customers. Then, too, the world is wide; and, as I have before stated, the foreign demand must greatly increase for the product of our spindles or those of Europe. There is one point, however, to which attention may well be turned. The world demands an enormous quantity of coarse and medium cotton yarn. Nearly or quite one-fourth the value of cotton fabrics exported from Great Britain has for some years consisted of yarn. The cost of a yarn

¹ The writer begs to state that he tried to avoid the discussion of this subject. The editor of a New Orleans paper telegraphed him to write an article upon Southern cotton manufactures, which he declined to do, only saying that he could not conscientiously recommend investments in Southern cotton mills. This reply was somewhat indiscreetly published, and has led to some unfriendly comments, and also to some absolute misstatements of the case. The writer has given some reasons for an opinion, which, after all, is but that of a single person. If he is mistaken, no one will be more glad to acknowledge the error; and he would ask what method could be better adapted to prove him to be wrong than the proposed cotton exhibition, with all its discussions?

mill is comparatively small, and the product requires relatively few hands. If any thing more is done, it ought to be in the direction of spinning yarn for export; but this, like all branches of the cotton manufacture, must be developed slowly, as the margin of profit is very small, and the business will be easily wrecked, not because of the cost of manufacturing, but because of the absence of the facilities for distribution. A great commerce cannot be improvised, and high commissions and charges soon eat up small profits on a far distant traffic.

The true diversity of employment which makes self-sustaining communities consists of occupations that do not appeal to the imagination like the great cotton factory; but the artisans and mechanics who work in iron and wood, the stove-maker and the like, the furniture-maker, the tinman, the housewright, the wagon-builder, the blacksmith, and the whitesmith are the most valuable citizens. The hundred arts that require but little capital and support many men are the ones that, next to the farmer, form the bone and sinew of society. When these are established, the textile factory may well follow, but ought not to precede in any large degree.

To one other subject let me advert. It is new to us, as well as to you. If I understand your climate and soil, you can raise fodder crops to any extent; but you cannot compete with the West or with many parts of the North in the production of ripened grain. If the method of saving green crops, called "ensilage," proves to be all that is claimed for it, or even half, and it shall be possible to keep fodder green and succulent for a year, then the oft-quoted benefactor who made only two blades of grass grow where one grew before, must give way to him who will be yet more blessed, — the man who feeds ten head of cattle where one found but a meagre pasture before.

If to the sheep fed upon the cotton seed you may add great droves of cattle fed on the corn, oats, rye, or millet saved in its green state, twenty, forty, even sixty tons to the acre; each two and a half tons worth one ton of the best of English hay; good feed for cattle, sheep, or hogs, — then what? Why, I am afraid we should all become as lazy as Emerson once said all mankind are, that is as lazy as each man dares to be; and down here in the delicious climate of these mountain valleys, through which I have lately passed feasting my eyes on scenes of beauty never conceived before, I know how lazy one man at least would surely be.

I am not sure that you will not charge me with being the prophet of the millennium of the political economist, a period when moderate industry and intelligence will assure so comfortable a shelter and so good a subsistence that it won't pay to be rich.

The millennium I am very sure you will reach long ere we do who dwell amid the granite and ice of New England.

But, while we shall rejoice in your welfare and share in it in the indissoluble bonds of common interests by which this nation is now held, we shall not envy you.

Our own old Commonwealth of Massachusetts is dearer to her sons

than any other land however fair to see; and under the stimulus of her harsher climate, with the sharp bite of the east wind between our teeth, we shall strive with you to see which shall send forth the truest men. Let me close this address, which touches so many points and works its devious way through so many channels, by recalling to your minds the words of one of the oldest English poets:—

“Man is his own star, and the soul that can
Render an honest and a perfect man
Defies all time, all influence, all fate;
Nothing to him falls early or too late;
His acts his angels are, or, good or ill,
The fateful shadows that walk by him still.”

I thank you, gentlemen, for the attention you have accorded me. May I be permitted to add a few words, not on party politics, but on the higher questions that make and unmake parties? [Cries of “Good, good.”]

I have claimed to be a Republican of Republicans, because, from the time I came to man’s estate, and even before, I had opposed slavery,—not only because I thought it morally and politically wrong, but even more because I considered it the greatest economic blunder under which a State could suffer.

During one of the last months of the civil war I happened to visit the camp near Washington, in which the deserters from Petersburg and Richmond were daily collecting in increasing numbers. I talked with many of them, and found them to be mostly veteran soldiers who had fought on the Confederate side from the beginning. At last I asked a soldier from Louisiana—a vigorous, intelligent-looking man—why he had surrendered. His black eyes gleamed with subdued passion, as he replied, “I have just found out what we have been fighting for.”—“What was it?” said I. “Fighting for rich men’s niggers, G—d—’em! I won’t fight for them any longer.”

When I heard these words, gentlemen, I saw before me a vision of the prosperity on which you have just entered in the land of the sunny South. I knew then that no longer would white and black alike be kept in the bonds of poverty and ignorance in order that the few might live in luxury on what they had not earned. It was that man’s insight into the cause of the war that marked its end.

That time of prosperity has come; and you, gentlemen, are my witnesses that never has the general welfare of the people of Georgia been as great as in this last year of abundance, and that never before has there been open to you such an opportunity to accumulate wealth as now appears in your near future: but this new wealth will be of that highest type gained by rightful methods, in which each dollar that any man passes to his own credit on his business ledger will mark a dollar’s worth of service that he has rendered to his fellow-men.

I have claimed also to be a Democrat of Democrats upon the ground that only those are entitled to the name who fully accept the

rule that every man, be he rich or poor, black or white, has an equal stake in righteous government. The rich man has no greater claim to influence merely because he possesses wealth, than the poor man because he desires to attain it, except so far as in the attainment of his property he has gained an honest influence over others. The best reason that could have been assigned for the change of the government of the State of South Carolina when Wade Hampton was chosen was given me by an old negro whom I met at the Capitol in Columbia a few months after the change, of which I asked him the reason: "De reason, boss," said he, "de reason is dat you can't put ign'ance ober intelligence, and make it stay." [Applause.]

Gentlemen, when you trust fully in the democratic principle that every man is entitled to one vote, and when no man fears to have that vote counted, there will be less danger of the continued control of ignorance over intelligence than there is when resort is had to any other method; and only when such is the rule will free institutions be fully established.

The exhibition that you propose to bring into existence here will be but an example of the industrial forces that are pervading this whole land, but, in more marked degree than elsewhere, your own State and your own section of this land. Here is the place where poor men can most easily establish themselves on small farms with least hardship and quicker remuneration; but, in order that they may come, there must be free speech, free schools, a free press, and the right of private judgment without prejudice or social isolation.

In fact, what is needed now, and what is growing fast, is the sense of national existence. Where is the leader at whose trumpet-call the great party of the nation will arise? Look for your analogy in the very art to which our attention has been devoted. In the kingdom of cotton there is no solid South, no solid North; but each member of the kingdom is dependent upon all the rest. The art begins with the field-hand who first stirs the soil and plants the seed, and ends only when the finished goods are placed upon the shelves of those who distribute them. Each member of the craft depends upon all; and the whole structure of society, North and South, is twisted into the strand and interwoven in the web that constitutes the product of the cotton field and of the cotton mill.

So also, in the art of government, all interests are harmonious. In the question of good money; in that of equal and just taxation, whether under an excise law or a tariff act; in assuring integrity and efficiency in office; in peace, order, and industry, — there is no North, no South, no East, no West: but in both existing parties, and in all sections, there are different minds, different motives, and different methods proposed to attain these ends. These are the great questions of the future, on which the welfare of all depends, without distinction of section, race, or party, as parties now exist.

When the great national party arises in its might, and calls for its recruits upon all parties and all sections, then will right-minded men of every State, North or South, unite in its support; and these great

living questions of the present and of the future will take the place of the dead issues of the past. God grant that day is not far distant!

It is because I believe this exhibition will greatly promote a closer political union, and bring into most prominent view the identity of interests of the different sections of this country, that I feel the greatest interest in its being undertaken; and it is for the reason that I hold this conviction that I have introduced into this address the allusions to the past and to the political aspects of the present and the future, which might otherwise be considered out of place.

I have endeavored to treat the great industrial question as one not in the least degree depending upon our present party divisions or partisan politics. The subjects we are now considering are above politics: they are the elements of political science which control men and make parties.

It is one of the plainest facts to one who comes among you simply as a student of events, and who addresses you with no reference to the pending election, that your solid South is being rent by forces that will bring right-minded men of the South into zealous co-operation with like-minded men of the North; that your future leaders will be those whose interests are in the living present; and that your own dead past will bury its dead. [Applause.] We can see more clearly than you can yourselves that the color line is fading away; that if any city, county, or State attempts to deny to any man, black or white, the right to speak, act, and vote as he pleases, that section is becoming poor. Emigrants shun it, self-respecting white laborers leave it, and its colored laborers remain only until they can get means to move away.

We see other sections of your Southern land that are more wise, where the black man is permitted to have the white man's chance; where schools are maintained and justice is assured: and these sections are becoming rich and prosperous. For such examples one need not go beyond Atlanta and Chattanooga. One need only to illustrate the process to which I have referred by one of many cases that I could cite where the negro farmer who had migrated from one State where he was abused to another where he was trusted, and, in the second year from that time, received from a banker an advance of one thousand dollars on the cotton crop that he and his children had made, and used the money to pay for the land that he had hired.

More potent than prejudice or passion these great forces slowly but surely work. They may be retarded, but cannot be stopped. Liberty and justice shall surely govern this fair land.

Steadfast in truth and right
This Nation still shall be;
"Good, great, and joyous, beautiful and free:
This is alone life, joy, empire, or victory."

[Warm and continued applause.] Such is always the imperative law: no man's property is safe, and no man's welfare is assured, where

justice is denied to the poor, or where crime goes unpunished ; no State can prosper, however rich the land or varied the resources, where human rights are not respected. If States cannot or do not govern themselves justly, and accord an equal chance to all their citizens, their influence in the counsels of the nation must be small indeed. But wherever I have been I find great changes have been made, and these great forces working, — on all your lines of railroad new enterprise, thrift, and energy, towns increasing and cities growing ; and, as I have said, the color line is fading in these places, whatever may be the case in the interior. I trust the progress I have noted where I have been may be but the symbol of other districts and other States. If it is not, none know the facts as well as you yourselves, and none can assure the remedy except yourselves. By your own acts you shall be justified ; and, when the end is reached, what grander chapter in history will ever have been recorded than that which is being now written?

I had read the Scripture where it is written that men should convert their swords into ploughshares and their spears into pruning-hooks ; but in your neighboring city of Chattanooga I also saw the battery that had belched forth fire and death converted into a fountain of living water.¹

As you convert the darkness of oppression and slavery to liberty and justice, so shall you be judged by men and by Him who created all the nations of the earth.

At the conclusion of the address, after the hearty applause had subsided, Mr. S. M. Inman offered the following : —

“*Resolved*, That the cordial thanks of the citizens of Georgia, who are now assembled in the Capitol, be presented to Mr. Edward Atkinson of Boston, Mass., for his very able and interesting address on the cultivation and manufacture of cotton, and the influences resulting thereupon.”

Mr. Inman supported the resolution in a handsome effort, and it was unanimously adopted.

Mr. H. I. Kimball offered a resolution requesting a copy of the address for publication, which was unanimously adopted.

Mr. Atkinson stated, that if he had erred in any of his statements in the address in any way, shape, or form, he would esteem it as a personal favor if any one would correct it.

Mr. Atkinson was warmly congratulated by Governor Colquitt, ex-Governor Bullock, Messrs. S. M. and W. P. Inman, H. I. Kimball, and the audience generally who had enjoyed the address.

¹ One of the Confederate forts at Chattanooga now serves as a reservoir to supply the city with water; another supplies the great iron-works established since the war at that place by one of the Northern carpet-baggers, “who carried his trunk and staid,” and who was himself a leader in thirteen great battles near that city by which it was redeemed from the bondage of slavery and opened to the great forces of liberty.

APPENDIX.

THE following communication, recently printed in "The Planters' Journal," Vicksburg, Miss., may add something to the interest of this pamphlet.

E. A.

To the Editor of the Planters' Journal, Vicksburg, Miss.

My recent conversation with you upon the subject of the proposed cotton exhibition and the objects thereof, induces me to present certain points to the members of the Planters' Association, which do not appear to be well understood.

It seems to be assumed, that, because cotton is sold at a certain price per pound for the gross weight of the bale, therefore the bagging, iron hoops, and sand are sold at the full price of cotton. There could not be a greater delusion.

When the cotton reaches Europe, the allowance made for tare is a little more than enough to compensate for the bags and ropes, the little more constituting a sort of guaranty or insurance against the risk.

In respect to the cotton used in the United States, a careful account is kept at every factory of the amount of waste from bagging, hoops, sand, and heavy waste; and care is taken not to repeat purchases in places that appear to be subject to any excessive waste from these causes.

If a careful computation be made, extending over a series of years, it will be found that the average price paid in Liverpool for cotton, at net weight (tare having been allowed for bagging and hoops), is as much higher than the price in New York for cotton at gross weight, as will compensate for the tare, the freight, the insurance, and other charges.

If cotton were sold in New Orleans, with an allowance for tare equal to the weight of the bags and hoops, the price would be advanced in just the same proportion, or a little more.

In point of fact, what is paid for is the fibre that is worked into cloth, and nothing else. If the packing of the fibre is bad, a less price is paid for the contents of the bale than would be paid for the same contents properly packed, because all bad packages imply a risk of loss to the consumer; and the consumer is, in the long run, perfectly sure to get such an abatement on the price he would otherwise pay as will cover the waste, and a little more as a guaranty.

Every consumer will pay a higher net price for an article so packed as to make him absolutely sure of the quantity and value of the stock that he receives, than he will for one so packed that he is not certain.

The present barbarous method of packing American cotton costs the cotton-grower, in my judgment, from one to five per cent on the whole crop.

One per cent is the minimum for the guaranty against an excess of bags and hoops, and five per cent would not be excessive as a guaranty against the loss on sandy and dusty cotton.

That is to say, if all cotton, middling and above, were packed in clean sacks, held by light wires, and kept free from dust, rain, and mud (tare being allowed for the bags and wires used), the producer would receive an additional price equal to the tare, and also from one to three per cent more money for each bale than he is now receiving; and, if all cotton below middling, thus graded because of leaf, dust, and sand, were properly treated in the gin-house, the cotton-grower would net two to five per cent for each bale more than he now gets.

The above estimates are based upon continuing the present mode of ginning, the present construction of gins and presses, and the present method of baling, except a substitution of wire for hoop-iron. That is to say, the value of the cotton crop to the producers can be increased two to five per cent without any fundamental changes, but only by such care and attention to present methods as reasonable economy would call for.

But there is a very much greater saving within the reach of the Southern cotton-grower, — one that would add not less than ten per cent to the value of the crop, but not at the cost of the consumer. If that part of the manufacture which must be done where the cotton is grown, were done in a skilful and suitable manner, the consumers would save, in the labor of converting cotton into cloth, all that the producers gained in the price of cotton.

To state this point in the most incisive way, I will venture the assertion that the greater part of the American cotton crop is deteriorated, and its value reduced ten per cent between the time it is picked in the field, and the time when it is turned out from the compress to be shipped abroad or to the North.

The smaller portion, ginned in large establishments, carefully managed, under good discipline, is probably as well handled and as free from deterioration as is consistent with the present mode of ginning and baling; but, as compared with the treatment which the cotton receives after it reaches the factory, the whole crop is badly treated in the South, and the larger part of the crop very badly.

In order that this point may be fully comprehended, it is necessary to consider the work that is done in the factory to prepare cotton for the process of spinning.

The bale of cotton reaches the mill after having been subjected to excessive compression. This compression does not apparently injure the fibre; but it makes it much more difficult to remove dirt, leaf, motes, and other trash, than if the fibre had been subjected to a suitable treatment immediately after leaving the gin, when it was in the lightest or most open condition.

In the picker-room of the cotton factory, the bale of cotton is subjected —

First, To the action of an opener to lighten it up and overcome the effect of compression.

Second, It is passed through the breaker lapper or picker, to remove seed, sand, and heavy dirt. This machine usually contains two, sometimes three metal beaters, revolving at a speed of twelve to sixteen hundred times per minute. The blades of the beaters move four thousand to six thousand feet per minute.

Third, It is passed through the finisher lapper or picker, containing two, sometimes three beaters, to complete the work of cleaning and make a lap suitable for the first card.

In England the method sometimes varies from this; the cotton being passed through a succession of three machines, each containing one beater.

Combined in or with these machines are numerous devices or apparatus to aid in the removal of the dirt, consisting either of mechanical appliances, or long trunks with grates or grids at the bottom, through which the cotton is blown, the dirt sifting out and passing through the grids into a trough, from which it is removed.

After the process of preparation, the cotton is usually carded twice in this country; in England once, but on a larger card. The true object of carding is to lay the fibres parallel, and to remove short or imperfect fibre. The card is not the machine that ought to be greatly relied upon for the removal of motes; but, in point of fact, a large quantity of motes and leaf pass the most effective systems of opening and picking, and are partly removed upon the card.

Now, let it be observed that each one of these processes does more or less injury to the cotton fibre. Every beater weakens the staple. Every inch of carding beyond what is needed to lay the fibres parallel ought to be avoided. Let it be further observed, that a single treatment at the right place will remove substantially all the immature seed that has passed the grids of the cotton gin, all the sand, and all the heavy waste. Let it be noted that the multiplication of beaters, and the excess of carding, are for the purpose of removing motes, leaf, shives, and other light particles of trash that make specky cloth. Then bear in mind that a very large portion of these motes get into the cotton in the gin-house, or from the dust and dirt that blow about it, or from the coarse bagging put upon the cotton, or from the mud and dust to which the bales are exposed. Let all these points be considered, and my statement will not appear extravagant, that the larger portion of every cotton crop is depreciated ten per cent for want of skill and care in the primary treatment, which primary processes constitute the most important branch of the cotton manufacture.

It is often said that cotton well ginned is half carded, and cotton well carded is half spun.

I have spoken of the possibility of the cotton-growers adding a cent a pound to the value of the larger part of the cotton crop, and not at the cost of the consumer, but by the saving of waste.

The advantage to the consumer would be in part only the reduction in the cost of picking and carding, but mainly in the greater strength of the yarn, and therefore a greatly increased product in spinning and weaving.

I have stated that the right point to treat cotton for the removal of all heavy waste and a large portion of the motes gathered with the cotton in the field is when the cotton leaves the gin, and before it has been condensed or compressed in any manner. How this should be done is a question to be settled by experience. It may be accomplished by a slow-moving single beater, by what is called a preparer, or by blowing the cotton through a trunk furnished with grids.

A large portion of the work will be accomplished by keeping the motes out of the cotton that now infest it in the gin-house, cotton press, and yard.

If these motes, consisting of bits of leaf, boll, and trash from the field, dust and trash from the gin-house, and dirt from the bags, levee, or yard, were kept out or taken out, there would be no material difference in the weight of the bale. This is not the stuff that adds weight, and the labor and treatment of the cotton in the picker and card room of the factory could be reduced one-half at the very least.

One beater, or its equivalent, applied to the removal of motes as the cotton is delivered from the gin, before compression, would be as effective as two beaters after compression; and one carding applied to clean and well-ginned cotton, carefully baled, and kept clean after baling, would be as effective as double carding applied to the average of the cotton as now delivered. By reducing the number of beaters, and reducing the carding to the simple purpose of straightening fibres, a larger quantity of stronger yarn would be produced to each spindle, and every loom could be speeded higher with less imperfect work.

Another very great advantage in the cleaning of the cotton immediately after it has passed the gin, and before compression, would be the removal of the almost impalpable sand or dust that infests the cotton grown on many soils, and that causes injury to the machinery of the cotton factory, especially to the cards.

In this connection, let me again call the attention of planters to the expediency of investigating the merits of the Ralston trash-cleaner, and other machinery of like kind, in which very dirty cotton is subjected to the action of beaters before the fibre has been removed from the seed. The seed with the fibre attached having greater specific gravity than the dirt, motes, or trash that are mixed with the fibre, is carried by the action of the beater away from the trash detached by its action, and the trash falls behind into the receptacles prepared to catch it. I have never seen the machine, but the theory is unquestionably right.

In my previous communications I have said that the cotton manufacture is a unit: it begins on the field, and ends in the cloth-room of the factory. The most important part of this manufacture must be carried on near the field, and is the process treated in this paper.

If the South desires to enter upon the safest, surest, and most profitable branch of cotton manufacturing in which the largest results can be reached with the least expenditure of capital, it will do well to consider these suggestions.

EDWARD ATKINSON.

RETURN TO: CIRCULATION DEPARTMENT
198 Main Stacks

LOAN PERIOD	1	2	3
Home Use			
	4	5	6

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS.

Renewals and Recharges may be made 4 days prior to the due date.
Books may be renewed by calling 642-3405.

DUE AS STAMPED BELOW.

APR 20	2004	

